

Bd 60. (New) An isolated nucleic acid molecule selected from the group consisting of:

(a) an isolated nucleic acid molecule having an at least 50 contiguous nucleotide region identical in sequence to an at least 50 contiguous nucleotide region from SEQ ID NO:54, SEQ ID NO:56, SEQ ID NO:57, SEQ ID NO:59, SEQ ID NO:60, SEQ ID NO:62, SEQ ID NO:63, SEQ ID NO:64, SEQ ID NO:65, SEQ ID NO:67, SEQ ID NO:68 or SEQ ID NO:70;

(b) an isolated nucleic acid molecule comprising an at least 60 nucleotide region that is at least 95% identical in sequence to an at least 60 contiguous nucleotide region from SEQ ID NO:54, SEQ ID NO:56, SEQ ID NO:57, SEQ ID NO:59, SEQ ID NO:60, SEQ ID NO:62, SEQ ID NO:63, SEQ ID NO:64, SEQ ID NO:65, SEQ ID NO:67, SEQ ID NO:68 or SEQ ID NO:70, wherein said isolated nucleic acid molecule encodes a protein that binds a canine IL-13 protein; and

(c) an isolated nucleic acid molecule fully complementary to the isolated nucleic acid molecule of (a) or (b).

D1 61. (New) The isolated nucleic acid molecule of claim 60, wherein said isolated nucleic acid molecule comprises a nucleic acid sequence encoding an amino acid sequence selected from SEQ ID NO:55, SEQ ID NO:58, SEQ ID NO:61, SEQ ID NO:66 or SEQ ID NO:69.

62. (New) The isolated nucleic acid molecule of claim 60, wherein said isolated nucleic acid molecule comprises a nucleic acid sequence 95% identical to the sequence of SEQ ID NO:54, SEQ ID NO:56, SEQ ID NO:57, SEQ ID NO:59, SEQ ID NO:60, SEQ ID NO:62, SEQ ID NO:63, SEQ ID NO:64, SEQ ID NO:65, SEQ ID NO:67, SEQ ID NO:68 or SEQ ID NO:70, and wherein said isolated nucleic acid sequence encodes a protein that binds a canine IL-13 protein.

63. (New) An isolated nucleic acid molecule selected from the group consisting of:
(a) an isolated nucleic acid molecule encoding a protein selected from the group consisting of:

Cont B2
(i) a protein comprising an amino acid sequence 95% identical to the sequence of SEQ ID NO:55, SEQ ID NO:58, SEQ ID NO:61, SEQ ID NO:66 or SEQ ID NO:69, wherein said protein binds a canine IL-13 protein; and

(ii) a protein comprising an at least 40 contiguous amino acid region identical in sequence to an at least 40 contiguous amino acid region from SEQ ID NO:55, SEQ ID NO:58, SEQ ID NO:61, SEQ ID NO:66 or SEQ ID NO:69; and

(b) an isolated nucleic acid molecule fully complementary to an isolated nucleic acid molecule of (a).

64. (New) An isolated protein selected from the group consisting of:

(a) a protein comprising an at least 50 contiguous amino acid sequence to an at least 50 contiguous amino acid sequence from SEQ ID NO:55, SEQ ID NO:58, SEQ ID NO:61, SEQ ID NO:66 or SEQ ID NO:69, wherein said protein binds a canine IL-13 protein; and

D1 > cont
(b) a protein comprising an amino acid sequence that is at least 95% identical in sequence to SEQ ID NO:55, SEQ ID NO:58, SEQ ID NO:61, SEQ ID NO:66 or SEQ ID NO:69, wherein said protein binds a canine IL-13 protein.

65. (New) The isolated protein of claim 64, wherein said isolated protein comprises an amino acid sequence selected from SEQ ID NO:55, SEQ ID NO:58, SEQ ID NO:61, SEQ ID NO:66 or SEQ ID NO:69.

66. (New) A chimeric nucleic acid molecule encoding a fusion protein comprising a carrier protein domain and a canine IL-13R α 2 protein domain, wherein said canine IL-13R α 2 protein domain comprises an at least 40 contiguous amino acid region identical in sequence to an at least 40 contiguous amino acid region from SEQ ID NO:55, SEQ ID NO:58, SEQ ID NO:61, SEQ ID NO:66 or SEQ ID NO:69, and wherein said canine IL-13R α 2 protein domain binds a canine IL-13 protein.

67. (New) The chimeric nucleic acid molecule of claim 66, wherein said fusion protein comprises a linker sequence.

Cont
68. (New) The chimeric nucleic acid molecule of claim 66, wherein said carrier protein domain is an immunoglobulin Fc region.

69. (New) The chimeric nucleic acid molecule of claim 66, wherein said carrier protein domain is a canine immunoglobulin Fc region.

70. (New) The chimeric nucleic acid molecule of claim 66, wherein said carrier protein domain is a canine immunoglobulin gamma Fc region.

71. (New) The chimeric nucleic acid molecule of claim 66, wherein said chimeric nucleic acid molecule comprises a nucleic acid sequence selected from the group consisting SEQ ID NO:71, SEQ ID NO:74, SEQ ID NO:77, SEQ ID NO:80 and SEQ ID NO:82.

DI
cont
72. (New) The chimeric nucleic acid molecule of claim 66, wherein said IL-13R α 2 protein domain is encoded by nucleic acid sequence selected from the group consisting of SEQ ID NO:54, SEQ ID NO:57, SEQ ID NO:60, SEQ ID NO:63, SEQ ID NO:65 and SEQ ID NO:68.

73. (New) The chimeric nucleic acid molecule of claim 66, wherein said carrier protein domain is encoded by the 5' end of the nucleic acid molecule and said IL-13R α 2 protein domain is encoded by the 3' end of the nucleic acid molecule.

74. (New) The chimeric nucleic acid molecule of claim 66, wherein said IL-13R α 2 protein domain is encoded by the 5' end of the nucleic acid molecule and said carrier protein domain is encoded by the 3' end of the nucleic acid molecule.

75. (New) A fusion protein comprising a carrier protein domain and a canine-IL-13R α 2 protein domain.

76. (New) The fusion protein of claim 75, wherein said fusion protein comprises an amino acid sequence selected from the group consisting of SEQ ID NO:72, SEQ ID NO:75, SEQ ID NO:78 and SEQ ID NO:81.

77. (New) The fusion protein of claim 75, wherein said IL-13R α 2 protein domain comprises an amino acid sequence selected from the group consisting of SEQ ID NO:55, SEQ ID NO:58, SEQ ID NO:61 and SEQ ID NO:66 and SEQ ID NO:69.

78. (New) A therapeutic composition comprising a nucleic acid molecule comprising a nucleic acid molecule encoding a protein selected from a canine IL-13R α 2 protein and the fusion protein of claim 75.

79. (New) A method to regulate an immune response in a canid, said method comprising administering to said canid the therapeutic composition of claim 78.

80. (New) A method to produce a canine IL-13R α 2 protein, said method comprising:

(a) culturing a cell comprising a recombinant nucleic acid molecule selected from the group consisting of:

(i) an isolated nucleic acid molecule having an at least 50 contiguous nucleotide region identical in sequence to an at least 50 contiguous nucleotide region from SEQ ID NO:54, SEQ ID NO:56, SEQ ID NO:57, SEQ ID NO:59, SEQ ID NO:60, SEQ ID NO:62, SEQ ID NO:63, SEQ ID NO:64, SEQ ID NO:65, SEQ ID NO:67, SEQ ID NO:68 or SEQ ID NO:70;

(ii) an isolated nucleic acid molecule comprising an at least 100 nucleotide region that is at least 95% identical in sequence to an at least 100 contiguous nucleotide region from SEQ ID NO:54, SEQ ID NO:56, SEQ ID NO:57, SEQ ID NO:59, SEQ ID NO:60, SEQ ID NO:62, SEQ ID NO:63, SEQ ID NO:64, SEQ ID NO:65, SEQ ID NO:67, SEQ ID NO:68 or SEQ ID NO:70, wherein said isolated nucleic acid molecule encodes a protein that binds a canine IL-13 protein;